Curriculum Vitae

Taro Watanabe
Natural Language Processing Laboratory
Division of Information Science
Nara Institute of Science and Technology
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Research Interest

Machine Translation, Machine Learning, Natural Language Processing

Work Experience

April, 2020 – present   Professor, Nara Institute of Schience and Technology (NAIST)

April, 2015 – March, 2020   Software Engineer, Google.

June, 2009 – March, 2015   Senior Researcher, National Institute of Information and Communications Technology (NICT).

Bayesian approach to induce latent structures and POS labels for SMT. Neural networks for automatically learning feature representations. Online learning for {string,tree}-to-{string,tree} models. Bilingual dictionary mining from comparable corpora.

July, 2005 – December, 2008   Research Specialist, NTT Communication Science Labs.

An efficient decoding method for hierarchical phrase-based translation. Exploit millions of sparse features in statistical machine translation based on online large-margin training.

April, 2001 – June, 2005   Researcher, ATR Spoken Language Translation Research Labs.

Word alignment modeling based on chunk constraints. A decoding method for word-based statistical machine translation using example sentences.

Software

trance   An implementation of transition-based neural constituent parsing (`https://github.com/tarowatanabe/trance`).

cicada	A hyppergraph-based toolkit for machine translation (https://github.com/tarowatanabe/cicada).
expgram	An ngram toolkit with succinct storage (https://github.com/tarowatanabe/expgram).

Education

March, 2004	Ph.D. in Informatics, Kyoto University.
May, 2000	Master of Science, Language Technologies Institute, Carnegie Mellon University.
March, 1997	MS of Information Science, Kyoto University.
March, 1994	BS of Information Science, Kyoto University.

Book	Machine Translation *(in Japanese)*. 2014. Taro Watanabe, Kenji Imamura, Hideto Kazawa, Graham Neubig and Toshiaki Nakazawa. Corona Publishing.

Selected Publications

Yusuke Oda, Taku Kudo, Tetsuji Nakagawa and Taro Watanabe. 2016. Phrase-based Machine Translation using Multiple Reordering Candidates. In *COLING 2016*.

Graham Neubig and Taro Watanabe. 2016. Optimization for Statistical Machine Translation: A Survey. In *Computational Linguistics*.

Xiaolin Wang, Masao Utiyama, Andrew Finch, Taro Watanabe and Eiichiro Sumita. 2015. Leave-one-out Word Alignment without Garbage Collector Effects. In *EMNLP 2015*.

Hidetaka Kamigaito, Taro Watanabe, Hiroya Takamura, Manabu Okumura andEiichiro Sumita. 2015. Hierarchical Back-off Modeling of Hiero Grammar based on Non-parametric Bayesian Model. In *Proc. of EMNLP 2015*.

Taro Watanabe and Eiichiro Sumita. 2015. Transition-based Neural Constituent Parsing. In *Proc. of ACL 2015*.

Hideya Mino, Taro Watanabe, Eiichiro Sumita. 2014. Syntax-Augmented Machine Translation using Syntax-Label Clustering. In *Proc. of EMNLP 2014*.

Hidetaka Kamigaito, Taro Watanabe, Hiroya Takamura and Manabu Okumura. 2014. Unsupervised Word Alignment Using Frequency Constraint in Posterior Regularized EM. In *Proc. of EMNLP 2014*.

Youzheng Wu, Taro Watanabe and Chiori Hori. 2014. Recurrent Neural Network-based Tuple Sequence Model for Machine Translation. In *Proc. of COLING 2014*.

Akihiro Tamura, Taro Watanabe and Eiichiro Sumita. 2014. Recurrent Neural Networks for Word Alignment Model. In *Proc. of ACL 2014*.

Akihiro Tamura, Taro Watanabe, Eiichiro Sumita, Hiroya Takamura and Manabu Okumura. 2013. Part-of-Speech Induction in Dependency Trees for Statistical Machine Translation. In *Proc. of ACL 2013*.

Lemao Liu, Taro Watanabe, Eiichiro Sumita and Tiejun Zhao. 2013. Additive Neural Networks for Statistical Machine Translation. In *Proc. of ACL 2013*.

Conghui Zhu, Taro Watanabe, Eiichiro Sumita and Tiejun Zhao. 2013. Hierarchical Phrase Table Combination for Machine Translation. In *Proc. of ACL 2013*.

Akihiro Tamura, Taro Watanabe and Eiichiro Sumita. 2012. Bilingual Lexicon Extraction from Comparable Corpora Using Label Propagation. In *Proc. of EMNLP-CoNLL 2012*.

Graham Neubig, Taro Watanabe and Shinsuke Mori. 2012. Inducing a Discriminative Parser to Optimize Machine Translation Reordering. In *Proc. of EMNLP-CoNLL 2012*.

Lemao Liu, Hailong Cao, Taro Watanabe, Tiejun Zhao, Mo Yu and Conghui Zhu. 2012. Locally Training the Log-Linear Model for SMT. In *Proc. of EMNLP-CoNLL 2012*.

Katsuhiko Hayashi, Taro Watanabe, Masayuki Asahara and Yuji Matsumoto. 2012. Head-Driven Transition-based Parsing with Top-Down Prediction. In *Proc. of ACL 2012*.

Graham Neubig, Taro Watanabe, Shinsuke Mori and Tatsuya Kawahara. 2012. Machine Translation without Words through Substring Alignment. In *Proc. of ACL 2012*.

Taro Watanabe. 2012. Optimized Online Rank Learning for Machine Translation. In *Proc. of NAACL-HLT 2012*. pp. 253-262.

Taro Watanabe. 2012. Field of Statistical Machine Translation. In *Journal of the Japanese Society for Artificial Intelligence (invited paper, in Japanese)*. pp. 288-295. Vol. 27 No. 3 May 2012.

Katsuhiko Hayashi, Taro Watanabe, Masayuki Asahara and Yuji Matsumoto. 2011. Third-order Variational Reranking on Packed-Shared Dependency Forests. In *Proc. of EMNLP 2011*. pp. 1479-1488.

Taro Watanabe and Eiichiro Sumita. 2011. Machine Translation System Combination by Confusion Forest. In *Proc. of ACL-HLT 2011*. pp. 1249-1257.

Graham Neubig, Taro Watanabe, Eiichiro Sumita, Shinsuke Mori and Tatsuya Kawahara. 2011. An Unsupervised Model for Joint Phrase Alignment and Extraction In *Proc. of ACL-HLT 2011*. pp. 632-641.

Taro Watanabe, Jun Suzuki, Hajime Tsukada and Hideki Isozaki. 2007. Online Large-Margin Training for Statistical Machine Translation. In *Proc. of EMNLP-CoNLL 2007*. pp. 764-773.

Taro Watanabe, Hajime Tsukada and Hideki Isozaki. 2006. Left-to-Right Target Generation for Hierarchical Phrase-based Translation In *Proc. of COLING-ACL 2006*. pp. 777-784.

Taro Watanabe, Kenji Imamura, Eiichiro Sumita and Hiroshi G. Okuno. 2004. Statistical Machine Translation Using Hierarchical Phrase Alignment In *The IEICE Transaction on Information and Systems, PT.2 (Japanese)* , Vol.J87-D-II, No.4, pp. 978-986

Taro Watanabe. 2004. Example-based Statistical Machine Translation *Ph.D. thesis*, Kyoto University.

Taro Watanabe, Eiichiro Sumita and Hiroshi G. Okuno. 2003. Decoding Algorithms for Statistical Machine Transaltion Considering Generation Directions In *Information Processing Society of Japan* pp. 3202 - 3210 (Vol. 44, No. 12)

Taro Watanabe, Eiichiro Sumita and Hiroshi G. Okuno. 2003. Chunk-based Statistical Translation. In *Proc. of ACL 2003*. pp. 303-310 Sapporo, Japan.

Honors

2014 IPSJ Best Paper Award

2012 IPSJ Best Paper Award

2011 Annual Meeting Excellent Paper (NLP, Japan)

2003 ATR Research Award

1998 Fulbright Travel Grant Awards

Lectures

Lecture at YANS. 2021.

ALAGIN NLP Seminar (Machine Translation). 2015.

ALAGIN NLP Seminar (Machine Translation). 2014.

Lecture on Machine Translation (Tokyo University). 2013.

HIT-MSRA Summer School 2012.

Cutting Edge in Statistical Machine Translation. In *Conference on Natural Language Processing (in Japanese)*. 2012.

HIT-MSRA Summer School 2011.

Foundations of Statistical Machine Translation: Past, Present and Future. In *INTERSPEECH 2010 Tutorial*. 2010.

Statistical Machine Translation Tutorial. In *Conference on Natural Language Processing (in Japanese)*. 2004.

Activities   Action editor of ACL Rolling Review (2021 – present)

Editorial board member of Transactions on Audio Speech and Language Processing (2018 – 2021)

Editorial board member of Transactions on Asian and Low-Resource Language Information Processing (2017 – present)

Editorial board member of the Journal of Machine Translation (2016 – 2021)

Editorial board member of Computational Linguistics (2013 – 2015)

IJCNLP 2017 Program Chair (Machine Translation)

ACL 2022 Senior Area Chair (Machine Translation and Multilinguality)

EMNLP 2021 Area Chair (Machine Translation and Multilinguality)

AACL2020 Area Chair (Machine Translation)

ACL2020 Area Chair (Machine Translation)

ACL2019 Area Chair (Machine Translation)

EMNLP 2018 Area Chair (Machine Translation)

NAACL 2018 Area Chair (Machine Translation)

COLING 2016 Area Chair (Machine Translation)

ACL-IJCNLP 2015 Area Chair (Machine Translation and Multilinguality)

EMNLP 2013 Area Chair (Machine Translation)

ACL-HLT 2011 Area Chair (Machine Translation: Statistical Models)

ACL08-HLT Area Chair (Machine Translation)

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